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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,585	03/31/2001	Joshua T. Goodman	1018.128US1	6804

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EXAMINER

LEWIS, DAVID LEE

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,585

Applicant(s)

GOODMAN, JOSHUA T.

Examiner

David L. Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claims 1-45 are rejected under 35 U.S.C. 102(e) as being anticipated by Savolainen (2002/01126097).**

As in claim 1, Savolainen, teaches of a method for selecting an intended word entered using a reduced keypad, where each of one or more keys of the reduced keypad is mapped to a plurality of letters, figure 1 item 10, paragraph 29, figure 3, paragraph 44,

the method comprising: for an entered key input using a single-tap approach in which one of the keys is pressed only once for each letter, figure 3 item S1, paragraph 28 and 44,

determining one or more sequences of letters as the intended word based on a score for each of the one or more sequences of letters, figure 3 item S4-S6, paragraph 45;

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and, presenting the one or more sequences of letters as the intended word, where a user selects the intended word from the one or more sequences of letters without resorting to a multiple-tap approach in which one of the keys is pressed at least once for each letter, **figure 3 item S7, paragraph 64,**

and where the user can indicate without resorting to the multiple-tap approach an accepted one or more initial letters of the intended word from the one or more sequences of letters to cause redetermination of the one or more sequences of letters presented as the intended word, **figure 3 item S7 and S1, paragraph 64.**

Wherein Savolainen generally teaches displaying a selection of predicted possible words for input on a reduced key input device by means of sorting entered words according to a frequency of use as identified by a frequency of use number, with the most commonly used word listed first, new words capable of being added to a reference list from which words are analyzed and prioritized, also having a disambiguating system for displaying correctly, words that have been typed incorrectly.

As in claim 18, Savolainen, teaches of a computer-readable medium having instructions stored thereon for execution by a processor to perform a method for selecting an intended word entered using a reduced keypad, where each of one or more keys of the reduced keypad is mapped to a plurality of letters, figure 1 item 10, paragraph 29,

the method comprising: repeating, for an entered key input, a user having accepted a number of letters of the intended word, the number equal to zero or more, **figure 3 item S1, paragraph 44,**

determining one or more sequences of letters as the intended word consistent with the entered key input and the number of letters accepted by the user, **figure 3 item S4, paragraph 45;**

presenting the one or more sequences of letters as the intended word to the user, **figure 3 item S7, paragraph 64;**

and, receiving indication that an additional one of the letters of the intended word has been accepted by the user, such that the number of letters of the intended word accepted is increased by one, until indication has been received that the user has selected one of the one or more sequences of letters presented as the intended word, **figure 3 items S2, paragraph 65.**

Wherein Savolainen generally teaches displaying a selection of predicted possible words for input on a reduced key input device by means of sorting entered words according to a frequency of use as identified by a frequency of use number, with the most commonly used word listed first, new words capable of being added to a reference list from which words are analyzed and prioritized, also having a disambiguating system for displaying correctly, words that have been typed incorrectly.

As in claim 27, Savolainen, teaches of a method for selecting a word entered using a reduced keypad, where each of one or more keys of the reduced keypad is mapped to a plurality of letters, figure 1 item 10, paragraph 29,

the method comprising: receiving key input corresponding to the word, the key input having a left context, **figure 3 item S1 paragraph 44;**

for each word in a vocabulary that is consistent with the key input, determining a probability of the word given the left context, and adding the word and the

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probability of the word to an array of word-probability pairs, **paragraphs 56 and 57;**

finding one or more potential words from a dictionary of words, where each potential word has a cost between the entered key input and a sequence corresponding to the potential word less than a maximum cost, **figure 10 item S107 and S108, paragraph 86;**

determining a probability of each potential word given the left context and taking into account a probability that each letter of the potential word is misspelled, and adding the potential word and the probability of the word to the array, **paragraph 54, wherein disambiguating reads on said limitation;**

determining one or more sequences of letters consistent with the entered key input and a number of letters accepted by a user, the number equal to zero or more, the one or more sequences of letters including at least one sequence of letters for each letter corresponding to a number within the entered key input immediately after a part of the entered key input corresponding to the number of letters accepted by the user, **paragraph 83 and 90, wherein alpha numeric strings are linked to the text entry;**

determining a probability of each sequence of letters taking into account an out-of-vocabulary penalty and a first occurrence bonus, and adding the sequence of letters and the probability of the sequence of letters to the array, **paragraph 73-75, wherein new words are added to the list of referenced words, wherein these new words are sorted according to decreasing frequency of use, said frequency of use being equivalent to a weighted or bonus system, the out of vocabulary penalty is based on the words coming from outside the original set of vocabulary and being added to that list, because the words where never used, they are less weighted or in other words have a penalty;**

sorting the array of word-probability pairs in decreasing order of probability, **figure 10 item S108, paragraph 86;**

and, presenting a first number of words from the array of word-probability pairs to the user, where the user selects the word corresponding to the entered key input from the first number of words presented, **figure 10 item S109,**

and where the user can indicate additional letters have been accepted to increase the number of letters accepted by the user and to cause redetermination of the one or more sequences of letters, **figure 10 item S109 and S101.**

Wherein Savolainen generally teaches displaying a selection of predicted possible words for input on a reduced key input device by means of sorting entered words according to a frequency of use as identified by a frequency of use number, with the most commonly used word listed first, new words capable of being added to a reference list from which words are analyzed and prioritized, also having a disambiguating system for displaying correctly, words that have been typed incorrectly.

As in claim 35, Savolainen, teaches of a apparatus, figure 1 item 10, paragraph 29 comprising: a plurality of keys of a reduced keypad, each of one or more of the keys mapped to a plurality of letters, the plurality of keys used to enter key input corresponding to a word using a single-tap approach in which one of the keys is pressed only once for each letter, the key input having at least one of a left context and a right context, **figure 1 item 14, paragraph 30 and 31;**

and, a word-determining logic designed to determine one or more sequences of letters as the word and to present the one or more sequences of letters, where a

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user selects the word corresponding to the key input from the one or more sequences of letters without resorting to a multiple-tap approach in which one of the keys is pressed at least once for each letter, **figure 2 item 28 and 32, paragraph 32,**

and where the user can indicate without resorting to the multiple-tap approach an accepted one or more initial letters of the word from the one or more sequences to cause redetermination of the one or more sequences of letters presented, **figure 1 item 16b, paragraph 31 and 34.**

Wherein Savolainen generally teaches displaying a selection of predicted possible words for input on a reduced key input device by means of sorting entered words according to a frequency of use as identified by a frequency of use number, with the most commonly used word listed first, new words capable of being added to a reference list from which words are analyzed and prioritized, also having a disambiguating system for displaying correctly, words that have been typed incorrectly.

As in claim 2, 19, 28, 36, Savolainen, teaches of, wherein the reduced keypad is a numeric keypad, paragraph 30.

As in claim 3, 20, Savolainen, teaches of, wherein the sequences of letters each corresponds to a word not listed in a predetermined dictionary, paragraph 54 and 74.

As in claim 4, Savolainen, teaches of, wherein the sequences of letters each corresponds to a pseudo-word, paragraph 54.

As in claim 5, Savolainen, teaches of, further comprising receiving selection of the intended word from the user from the one or more sequences of letters, figure 1 item 16b.

As in claim 6, Savolainen, teaches of, further comprising: receiving indication of a first letter of the intended word from the user, figure 3 item S1; and, repeating the method such that the one or more sequences of letters are redetermined taking into account the first letter of the intended word indicated by the user, figure 3 item S2.

As in claim 7, Savolainen, teaches of, further comprising: receiving indication of a second letter of the intended word from the user; and, repeating the method such that the one or more sequences of letters are redetermined taking into account the first and the second letters of the intended word indicated by the user, figure 3 item S2.

As in claim 8, Savolainen, teaches of, wherein the user has accepted a number of letters of the intended word, the number equal to zero or more, figure 3 item S1, and determining the one or more sequences of letters comprises determining the one or more sequences of letters consistent with the entered key input and the number of letters accepted by the user, figure 3 item S4-S6, paragraph 56.

As in claim 9, 21, Savolainen, teaches of, wherein the one or more sequences of letters comprises a sequence of letters for each letter corresponding to a number within the entered key input immediately after a part of the entered key input corresponding to the number of letters accepted by the user, figure 3 item S8, paragraph 56 and 65.

As in claim 10, 22, Savolainen, teaches of, wherein the sequences of letter for each letter corresponding to the number within the entered key input immediately

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after the part of the entered key input corresponding to the number of letters accepted by the user comprises a most likely sequence of letters for each letter corresponding to the number within the entered key input immediately after the part of the entered key input corresponding to the number of letters accepted by the user, paragraph 34, 56, and 57.

As in claim 11, Savolainen, teaches of, wherein the most likely sequence of letters for each letter corresponding to the number within the entered key input immediately after the part of the entered key input corresponding to the number of letters accepted by the user is determined by using a letter language model, paragraph 56 and 78.

As in claim 12, Savolainen, teaches of, wherein using the letter language model comprises using an n-gram letter model, paragraph 56, wherein the features of the vocabulary module tree data structure is that the objects associated with each node are stored in the node data structure according to their frequency of use.

As in claim 13, 23, 32, Savolainen, teaches of, wherein determining the one or more sequences of letters comprises using a letter language model, paragraph 56.

As in claim 14, 24, 33, Savolainen, teaches of, wherein using the letter language model comprises using an n-gram letter model, paragraph 56 and 57, said n-gram being probabilistic frequency related.

As in claim 15, 25, Savolainen, teaches of, further comprising receiving the entered key input, figure 3 item S1.

As in claim 16, 26, Savolainen, teaches of, further comprising: determining a word corresponding to the entered key input as the intended word, figure S1; determining whether the word determined is in a dictionary of words, figure 3 item S4; and, ending the method in response to determining that the word determined is in the dictionary of words, figure 3 item S7 and S8.

As in claim 17, Savolainen, teaches of, wherein the method is performed by execution of a computer program by a processor from a computer-readable medium, figure 2 item 28 and 32, paragraph 29 and 32.

As in claim 29, Savolainen, teaches of, further initially comprising, for each word in a cache that is consistent with the key input, determining a probability of the word given the left context, and adding the word and the probability of the word to an array of word-probability pairs, paragraph 73 and 74, wherein new words can be added to the vocabulary module.

As in claim 30, Savolainen, teaches of, further comprising: for each word in the vocabulary that is consistent with the key input as an initial part of the word, determining a probability of the word given the left context, figure 10 item S108, and, upon determining that the probability is greater than a greatest probability so far determined, setting the greatest probability to the probability and a greatest probability word associated with the greatest probability to the word, paragraph 57; upon determining that the greatest probability is at least a number of times greater than a word of a first word-probability pair of the array of word probability-pairs, adding the greatest probability word associated with the greatest probability and the greatest probability a new first word-probability pair to the array, paragraph 57, figure 10 item S102.

As in claim 31, Savolainen, teaches of, further comprising: finding one or more additional potential words from the dictionary, where each additional potential

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word has a cost between the entered key input and a prefix of a sequence corresponding to the potential word less than a maximum cost, figure 10 item S108; determining a probability of each potential additional word given the left context and taking into account a partial word penalty, and upon determining that the probability is greater than the greatest probability so far determined, setting the greatest probability to the probability of the potential additional word and the greatest probability word associated with the greatest probability to the potential additional word, paragraph 57 and 86.

As in claim 34, Savolainen, teaches of, wherein the method is performed by execution of a computer program by a processor from a computer-readable medium, paragraph 29 and 44, figure 2 item 28 and 32.

As in claim 37-40, Savolainen, teaches of, further comprising a spell-checking logic designed to provide potential alternative words for the word corresponding to the key input entered, where the word is misspelled, taking into account that the word was entered using the plurality of keys, as opposed to a keyboard having a unique key for each of a plurality of letters, paragraph 54, having a disambiguating system for displaying correctly, words that have been typed incorrectly, therefore serving a spell check feature.

As in claim 41, Savolainen, teaches of, wherein the apparatus is a telephone, figure 6.

As in claim 42, Savolainen, teaches of, wherein the apparatus is a mobile telephone, figure 6.

As in claim 43, Savolainen, teaches of, wherein the apparatus is one of; a cellular telephone, a corded telephone, a cordless telephone, a digital telephone, and a radio telephone, figure 6, paragraph 79 and 88.

As in claim 44, Savolainen, teaches of, wherein the apparatus is one of; a pager, a desktop computer, a laptop computer, a handheld device, a personal-digital assistance (PDA) device, and a remote control device, paragraph 88 wherein said alternatives fall within an "electronic device" of the portable type.

As in claim 45, Savolainen, teaches of, wherein the word-determining logic comprises a computer program stored on a computer-readable medium for execution by a processor, figure 2 item 28 and 32, paragraph 32 and 44.

Response to Arguments

2. Applicant's arguments filed 11/18/2004 have been fully considered but they are not persuasive. Savolainen as broadly interpreted reads on the claimed invention. **Applicant argues** Savolainen does not enable the user to accept initial letters without using a multiple-tap approach. The Examiner disagrees. Savolainen's device has the ability to enable users to enter text from a reduced keyboard using only one keystroke per letter of desired text instead of the usual multi-tap or multiple keystroke method which is equivalent to the Applicants claim, paragraphs 28 and 44-46. **Applicant argues** Savolainen does not describe a method of accepting a number of letters of an intended word, but instead accepts an intended word form a vocabulary. The Examiner disagrees. Savolainen actually accepts intended numbers, letters, or words, paragraph 45. **Applicant argues** Savolainne does not describe enabling the user to accept a number of letters such that the sequences of letters determined as possible

intended words are consistent with the accepted letters. The Examiner disagrees. Here, Savolainen teaches of a sequence of letters are determined to result in a hit of the desired word of the list of words. The hit is equivalent to being determined consistent with the entered key input and the number of letters accepted by the user. **Applicant argues** there is no evidence in Savolainen to support a first occurrence bonus or out of vocabulary penalty. The Examiner disagrees. Savolainen teaches, paragraphs 73 –75, wherein new words are added to the list of referenced words, wherein these new words are sorted according to decreasing frequency of use, said frequency of use being equivalent to a weighted or bonus system, the out of vocabulary penalty is based on the words coming from outside the original set of vocabulary and being added to that list, because the words where never used, they are less weighted or in other words have a penalty. **Rejection maintained.**


Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and

the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(571) 272-7673**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on **(571) 272-7681**. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571)-273-8300.
5. Please note that all future correspondences directed to David L. Lewis must be sent to Art Unit 2629.
6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: David L. Lewis
June 24, 2006



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